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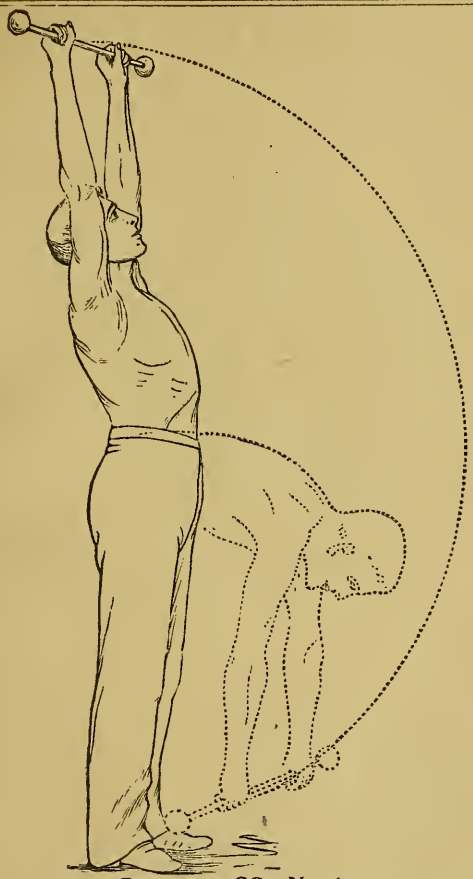
PHYSICAL TRAINING.

MOVEMENTS AND EXERCISES



FOR HOME WORK.

See Page 23. No. 1.

SELECTED FOR THE EXERCISING BAR, PATENTED.

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THE EXERCISING BAR,

Japanned Iron Balls, Ash Handle, 5 Feet Long Outside Measurement.

PATENTED.

PRICE LIST,

INCLUDING BOOK OF INSTRUCTIONS.

3 pounds	$1.00	12 pounds	$1.40
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MANUFACTURED BY

SAMUEL B. STOCKBERGER,

PHYSICAL AND ATHLETIC APPARATUS,

CANTON, OHIO, U. S. A.

PHYSICAL TRAINING.

MOVEMENTS AND EXERCISES FOR HOME WORK.

SELECTED FOR THE

EXERCISING BAR.---(Patented.)

COMPILED BY

SAMUEL B. STOCKBERGER,

Manufacturer of the EXERCISING BAR,

CANTON, OHIO.

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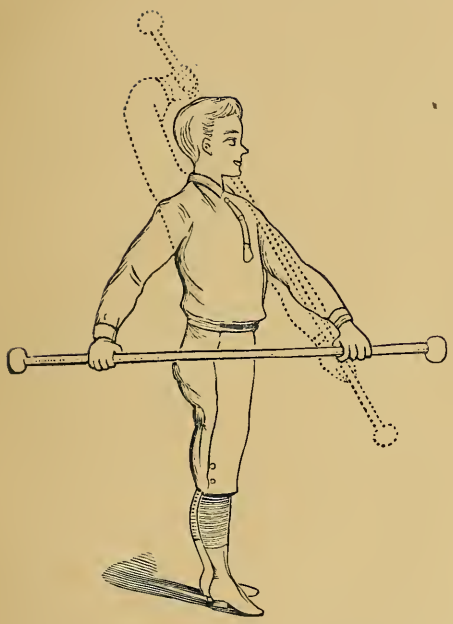
INTRODUCTION.



It is with considerable pleasure that we introduce to the public a new piece of Physical Apparatus which we are confident surpasses all previous efforts in effect and simplicity. The important position which gymnastic apparatus is securing in the home as a means of obtaining daily systematic exercise together with the demand made for apparatus at once cheap and effective with more perfect instructions has led us to manufacture the Exercising Bar and publish a manual of Exercises and Movements, showing the particular part or section of the body that each movement is designed to exercise.

These movements have been practically tested by taking each movement separately, and by overwork making the muscles sore; thus proving that the region was strongly affected by the exercise. Other parts of the body have been

brought into action to a certain extent, but the strongest action is in the part or parts named. Technical terms have, as far as possible, been omitted, so as to have the matter such as can be understood easily by every one.

The reader will be required to select from the movements —according to his own common sense—a series of drills best suited to himself. With a little study this can be accomplished very easily. Many of these exercises are familiar to gymnasts and athletes, but are not (nor is the effect of them) known to people in general. Practiced daily they will aid in building better bodies. Their effect on the mind will also be favorable, for a sensible education of the body causes the blood making machinery to make good blood instead of poor. This good blood is sent to the brain and fits that organ to do more and better work, without risk, than it can do when fed by a poor article. The heart, the lungs, and the other vital organs are also likely to be kept healthy and vigorous, from being supplied with this good blood and by a rational use of the muscles daily, yet without overdoing them. One who is trained in this way will safely pass the overwork of the brain and nerves, which to-day breaks down so many useful but physically untrained men and women, while they should still be in their prime, until nervous exhaustion has become a disorder familiar to nearly every physician in the land.

The aim has been to leave no muscle undeveloped, but to call attention to a few exercises for each part of each limb, and all parts of the body. They are free from risk, are not severe enough to overdo, and can be learned almost in an instant. They can be practiced in brief intervals between other duties. They call for no costume, no expensive appa-

ratus. The effect of each is shown in a way which every person can easily understand as they go along, and which they will be very likely to appreciate as well. *Good food, ample sleep,* and *no stimulants* are requirements for best results. Make *sure* of an hour or more every day of vigorous out-door work, no matter what the weather is. Finally, a littte smart work with any muscles even for only a few minutes mornings and evenings helps out the other work greatly, and in a few months you will see what a difference it will make in the size and strength of the muscles so used.

Samuel B. Stockberger.

August 1, 1889.

General Instructions.

1. Exercise in a well ventilated room.

2. If convenient, dispense with clothing that is not necessary for comfort, and do not wear tight belts or coats that are close fitting over the chest.

3. Begin work slow and end slow, working up to the best you can do, and finishing with lighter work.

4. Take in full, deep breaths often during the time you are exercising.

5. Never use enough weight or exercise long enough to become much fatigued, and vary your work so that all parts of your body shall be used.

6. Aim for perfection of body, brightness of intellect, and purity of soul.

7. Do not take violent exercise or icy baths; they will pave the way for heart troubles and rheumatic affections.

8. Study each movement carefully. At first learn the movements for one set of muscles. The next time execute what you have thus learned and study the movements for another set, continuing thus till all are understood.

9. Make the movements firmly and vigorously, grasping the bar tightly in the hands, and moving the arms and body as if you were going to lift a much greater weight.

10. If a muscle is smaller than its corresponding mate, give the smaller limb more work to do until it catches up in size with its mate.

11. *After exercising,* if the skin is moist and the clothing damp, do not hesitate a minute, but strip at once and with coarse towel rub your skin till it is thoroughly red all over, then put on dry underclothing; or take a warm bath, gradually finishing off with cooler water, drying off as before.

12. Repeat the movements as indicated in the directions, and increase the number of times gradually as you advance. If you want to increase the size of certain muscles, it may be necessary to repeat the movements given a great many more times than is shown.

13. Position—Heels together, toes turned out, knees close, hips back, stomach and chest out, roll the shoulders back and down, chin up and head back.

Straightening.

If you sit, stand, or walk habitually with your chin hanging down and the body leaning forward, you will soon cramp your lungs and stomach till, by-and-by, you will get weak. But hold the chin up as high as possible, and at once it raises and expands the chest, and makes it stand out full and well.

The straightening of the body not only improves the looks of its owner, but it makes the lungs inside of the chest larger and stronger, and thus helps to keep away consumption and other lung diseases, and so, often saves one's life. It also gives the stomach, heart, and other vital organs more room, so that they can work more freely. It makes it easy to sit or stand erect, tones up the general health, helps to prolong life, (while cramping the chest tends to shorten it,) and it brings a feeling of spirit and vigor which a delicate or sick person often longs for but does not know.

No. 1. Bar down behind, hands together at center of bar, palms of hands turned from you, one foot about eight inches in front of the other, chin up, chest out.

Breathe in as large a breath as you can.

Draw the head back, tip it as far down behind as possible; rest there a moment and then stand straight again.

Exhale slowly.

Repeat ten times.

No. 2. Bar behind shoulders, hands extended to ends of bar, palms turned forward, chin up, chest out.

Motion same as in No. 1.

Repeat five times.

No. 3. Position same as in No. 2. In addition, lower the bar to straight arm down behind.

Motion same as in No. 1.

Repeat five times.

Although rather severe, Nos. 3 and 4 will not be harmful if at first practiced moderately. They are effective exercises for strengthening the spine and straightening same; will broaden the shoulders, increase the chest capacity, and train the body to an erect position. Action, also in abdominal muscles.

FREE EXERCISES—WITHOUT BAR IN HANDS.

No. 4. Fold your arms behind you, or, arms down behind you, palms turned down, and fingers interlocked, one foot in front of the other, chest out, chin up.

Motion same as in No. 1.

Repeat ten times.

No. 5. Hands over head, arms straight, palms turned forward, thumbs interlocked, head turned up, keeping the eyes on the hands.

Lean the body backward, always keeping the arms in a straight line with the body, and the eyes on the hands. Now bring the body and arms forward, leaning to the

front, without bending the knees stoop over till the hands are about the height of knees; increasing gradually, lower until you can touch the toes.

Repeat ten times.

Action: In chest, arms, abdomen, back, thighs and knee joints.

No. 7. Hands over head, arms straight, palms turned forward, thumbs touching, body and arms in a vertical line.

Lower the arms to the sides, not in front, keeping the elbows straight, the little finger and the inner edge of the hand touching thigh.

Repeat twenty times.

Action: In chest, arms and shoulders.

While the hands are in the "down at side" position, walk about the room, chin up and hands swinging easily at sides.

This is the proper position for the chest while walking, sitting, or standing.

Breathing Exercises.

The act of breathing consists of the alternate expansion and contraction of the walls of the chest, by which air is alternately drawn into and expelled from its interior.

Inspiration is effected by enlarging the chest in all its diameters.

Expiration—the enlargement produced by inspiration is recovered from by the elastic recoil of the lungs.

With vigorous exercise there is increased activity of the respiratory process. The exercises given in this book are improved by deep, full breathing, half of their value depend-

ing on the observance of the following rule: *Always, when exercising, breathe slowly, and as large breaths as you can.*

Free inspirations aid materially in increasing chest expansion

An addition of three inches to the circumference of the chest implies that the lungs, instead of containing two hundred and fifty cubic inches of air, as they did before their functional activity was exalted, are now capable of receiving three hundred cubic inches of air within their cells. The value of this augmented lung accommodation will readily be admitted. Suppose, for example, that a man is attacked by inflammation of the lungs, by pleurisy, or some one of the varied forms of consumption, it may readily be conceived that, in such an emergency, the possession of enough lung tissue to admit forty or fifty additional cubic inches of air will amply suffice to turn the scale on the side of recovery. It assists a patient successfully to tide over the critical stage of disease.

Respiratory work will be valuable in overcoming the danger and inconvenience caused by the strain imposed on the respiratory organs and heart by suddenly increased activity.

Be sure to do the exercises in a well ventilated room.

No. 1. Bar down in front, palms turned toward you, hands about one foot apart, chest out, chin up.

Inhale a full breath as you raise the bar.

Raise the bar high up over head, keeping the elbows stiff and the upper arms close to ears while you slowly count four.

Exhale slowly while the bar comes down.

Repeat ten times.

This exercise enlarges the lower diameters of the chest; as you raise the arms you bring into action the muscles that raise the ribs, thereby increasing the capacity of the chest or lung room.

FREE EXERCISES.

No. 2. Hands against chest in front, just above the lower edge of ribs, elbows well back.

Breathe in and exhale slowly as large a breath as you can.

Inflate the lungs to their fullest capacity, hold the breath while you count five; exhale slowly, pressing down the side walls of the chest at the same time.

Repeat, counting ten.

Repeat, counting fifteen.

Take three or four deep inhalations; on the last pack the lungs full of air, exhale slowly, being careful not to do it jerkily, but steadily and easily.

Action: Lungs—all the involuntary and many of the voluntary breathing muscles.

No. 3. Hands down at sides, elbows stiff, knuckles out, fingers extended.

Raise the hands slowly out in front to straight above the head, interlacing the thumbs as the hands go up, inflating the lungs at the same time; exhale as the hands pass down to sides.

Emphasize the upward movement.

Repeat ten times.

No. 4. Position same as in No. 3. Raise the hands slowly out at sides to straight above head, inflating the lungs at the same time; exhale as the hands pass down to sides.

Emphasize the upward stroke.

Repeat ten times.

No. 5. Combine Nos. 3 and 4, keeping the chest well out, going up with 3, and down with 4, and reverse.

No. 6. Position same as in No. 3. Raise the arms out in front, arms horizontal; bring the hands back close to

chest, with the elbows so far back that you can put a cane between the arms and the back.

Inflate the lungs to their full capacity as the hands go slowly forward to arm horizontal in front.

Repeat ten times.

Action: In Nos. 2, 3, 4, 5 and 6, breathing muscles, arms, shoulders, and upper back.

No. 7. Take position as in No. 2. Slap the chest smartly, lightly and quickly, with the open fingers, the lungs being inflated to their fullest capacity while counting ten.

Repeat five times.

Action: Muscles that elevate the ribs and upper back; the "massage" is valuable in strengthening the lung tissue.

Arm Work.

Such is the constitution of man that labor may be said to be its own reward. There is a way to make a slim looking boy or girl, or older person, strong and hearty looking, if they will apply themselves systematically to a course of exercise. It is moderately hard and persistent work that tells in the end and it is just as practical and possible to build up muscle as it is to learn a lesson, an art or a trade.

We will observe, shortly, that making the arms large and strong makes much of the body strong also, for we can not use any muscle without bringing some others into play.

Not only are the muscles themselves benefitted by exercise, but, by their action many other tissues and organs become more vigorous. The heart beats more vigorously in order to carry more blood to the tissues. More oxygen is taken in by the lungs, and more heat is developed. Hence the skin, kidneys and lungs have to do more work to get rid of the waste

products. Breathing is mainly done by muscular action; thus, exercise causes the lungs to draw in an extra amount of fresh air, and to get rid of more impure air. Again, exercise stimulates the muscles which control the organs of digestion, thus giving a good appetite by creating a demand for food. In brief, muscular exercise keeps the whole machinery of the body in good working order.

It is laid down as a pretty safe rule, that a person of average height and weight, engaged in study, or any other indoor or inactive business, should have an amount of exercise equivalent to a daily walk of five miles along a level road.

A daily exercise of ten minutes will do much to develop feeble and narrow chests, to check the tendency, so common, to curvature of the spine, and to give muscular strength and vigor to all parts of the body.

Hand.

FREE EXERCISES.

No. 1. Hands down at side, open and shut fingers, keeping the elbows stiff, expression on odd counts.

Repeat twenty-five times.

Action: In fingers, hands, wrist and forearm.

No. 2. Hands over head. Shake the hands from the wrist, at the same time bringing the arms down to side, elbows stiff.

Repeat ten times.

Action: Wrists, strong.

No. 3. Hands down at sides. Open and shut hand, gripping as tightly as possible.

Repeat twenty-five times.

Action: Forearm, wrist, hand and fingers.

Forearm.

No. 1. Bar in one hand down at side against thigh, grasp tightly at the center; the bar is horizontal and at a right angle with body.

From the wrist work the bar, the ends going up and down with a see-saw motion, making the movement strong and as firmly as possible.

Repeat twenty times with each hand.

Action: In forearm, wrist and hand.

No. 2. Bar out in front in one hand, grasp tightly at the center, arm horizontal.

Revolve the bar back and forth, the balls describing a circle.

Repeat twenty times.

Action: Forearm, strong.

No. 3. Bar down in front, hands about two feet apart, palms turned inward, elbows stiff.

Bend the wrists sideways and both ways as if to break the bar; keep the whole arm stiff.

Repeat twenty times.

Action: Forearm, wrist and hand.

No. 4. Bar out in front, arms horizontal, palms turned down, elbows stiff.

Raise and lower the bar from the wrist, keeping the arms still.

Repeat fifteen times. Repeat, palms turned up.

Action: Forearm, wrist, front of shoulder.

MORE GOOD FOREARM WORK.—Carrying a heavy weight. Driving a hard mouthed horse. Sword exercise. "Pulling up" on a bar or rope. Climbing a rope or peg-pole. Pulling in "tug-of-war" game. Any kind of work or exercise which uses the hand vigorously, and keeps it shut or partly shut.

Upper Arm.

No. 1. Bar down in front, knuckles resting at front of thighs, palms out.

Raise the bar vigorously to face of shoulders, keeping the elbows stationary at side of hips; back to position easy.

Repeat fifty times.

Action: Upper arm chiefly.

FREE EXERCISES.

No. 2. Right hand close to hip, place the left hand in the right, the left arm extending across body.

Bear down hard with the left hand, and at the same time raise the right hand until both hands touch the shoulder, keeping the right elbow close to side.

Repeat twenty-five times. Repeat with left hand close to hip.

Action: In upper arm, moderate in back arm.

No. 3. Pulling Up. Provide a horizontal bar in a suitable place, where every day you can practice pulling the body up till the chin touches the hands. If you can not pull up at first, give a spring to go up, place your chin on the bar a moment, then lower very slowly.

Repeat from three to ten times.

This is one of the best exercises for the upper arm, and to expand the chest and broaden the shoulders.

More Good Work for the Upper Arm.—Going up a rope hand over hand. Fencing. Single stick. Underhand or overhand bowling. Arm work on the trapeze.

Upper Back Arm.

No. 1. Bar at face of shoulders, palms turned from you.

Push down hard to front of thighs, making the downward action as vigorously as possible, and raising the body on heels to prevent jar.

Repeat the exercise, with vocal expression, "Ah!" "Sh!" "Hello!"

Repeat from thirty to fifty times.

No. 2. Bar at face of shoulders, palms toward you.

Raise the bar to straight above head, and swing strong and steady to the farthest point possible down and back of the body, chest out and head well back.

Repeat ten times.

Action: Upper arm, back of shoulders and upper back.

FREE EXERCISES.

No. 3. Hands against wall two feet or more apart at the height of ears, elbows stiff; the feet are about two feet away from wall.

Bend the elbows, leaning the body against the wall till the chest touches wall.

Repeat twenty-five times.

Action:—In back arms and broadens the chest.

No. 4. Place the hands on the floor, body out at full length and rigid, hands at sides of shoulders.

Raise the body up till the elbows are straight, doing it if possible with only the thumb and fingers touching the floor. Do not bend the knees but support the body on hands and toes.

Repeat ten times.

Action:—In back arms, fingers, chest and body.

No. 5. Place two chairs so the seats are about two feet apart; stand about three feet away and place one hand on the seat edge of each chair.

Bend the elbows and lower the body until the face is level with the hands; push back to position.

Repeat ten times.

Action:—Strong in back arms and chest.

No. 6. Place two chairs so the backs are about two feet apart, stand between them placing one hand on the back of each; arms straight and rigid.

Lift the feet off the floor, supporting the weight of the body on the arms. Now bend the elbows and lower the body till the chin is nearly level with the hands; raise to straight arm again.

Repeat from one to ten times.

Upper Inner Arm.

No. 1. Bar down behind, hands about two feet apart, palms toward you, one foot about eight inches in front of the other, elbows stiff.

Raise the bar up behind you to the farthest point you can reach, doing it vigorously.

Repeat twenty times. Repeat, leaning forward and raising the arms higher.

Action:—Inner arms and back of shoulders.

The Shoulders.

There is little work for the shoulders that does not at the same time set some other part of the body in action. The front of the shoulder is a place where few persons are nearly as full, well shaped, and strong as they should be. That most

of them tend to sink in a little just in front of each shoulder is a proof that they have held their shoulders forward too much. But let them practice a few exercises which take hold of them at the front of each shoulder, and also tend to draw their shoulders well back, which the very filling of these muscles tend to do, and you will see that, long before the end of a year, the wrinkles in their coats will be nearly if not entirely smoothed out. The muscles of the side shoulder are no less important. You cannot put your hand up over your head without putting this part of your shoulder at work; so, in order to get strong all around, we will give this part some work also.

Front Shoulder.

No. 1. Bar out in front, horizontal, at about the height of waist, hands about two feet apart, palms turned up, elbows stiff.

Raise the bar to height of chin, keeping the elbows stiff.

Repeat ten times.

Action:—Front shoulders and arms.

No. 2. Bar out in front, horizontal, at height of shoulders, hands at ends of bar, palms turned up, elbows stiff.

Swing the bar in a horizontal circle first to the right and then to the left, turning the body only slightly, making most of the action in the shoulders.

Repeat twenty times.

Action:—In front shoulders and broadens the chest.

No. 3. Bar down in front, hands two feet apart, palms inward.

Carry the bar to a vertical line at right side of body, right hand at top of bar, left arm brought across the body. The palm of the right hand is to the front, of the left hand to the rear. Press the right shoulder and elbow well back. Push down to starting point with both hands, keeping head up.

Repeat twenty times. Repeat at left side.
Action:—In front shoulder and raises the shoulder.

FREE EXERCISES.

No. 4. Windmills. Keep the elbows stiff.
Swing the arms out and up and then back and down, keeping the arms as close to the body as possible as they pass up and down.
Repeat thirty times.
Action:—Front and back shoulders and side walls of chest.

No. 5. Slap. Arms horizontal out in front, hands open, palms touching each other.
Swing the arms to the rear as far as possible in a horizontal circle; swing back to front and slap as the hands come together. Keep the arms always at the height of ears.
Repeat fifty times.
Action:—In front shoulders, front upper chest and upper back.

Side Shoulder.

No. 1. Bar down in front, hands at ends of bar, palms inward, elbows stiff.
Raise the right hand and push it over head to down behind, keeping the elbows stiff. The bar is now down behind. Now raise the left hand up behind and push it over head to down in front, elbows stiff.
Repeat thirty times.
This exercises the side shoulder, and the whole shoulder moderately.

No. 2. Bar in front in a vertical line, hands at ends of bar, the right hand above head and left hand below waist.

Carry the right hand down at right side, at the same time raise the left up at left side and carry it up to former position of right hand. The right hand is now below waist, and left above head. Make the movement firmly and vigorously, and keep the bar close to body.

Repeat thirty times.

Action:—In side and front shoulders.

FREE EXERCISES.

No. 3. The tip of the fingers touch the top of the shoulders, the elbows are thrown back so the arms and shoulders are in a straight line, chest well out.

Strike up vigorously first with right hand, then with both; then with left hand, then again with both.

No. 4. Hands down at sides, wrists and elbows stiff.

Raise and lower the shoulders, making the expression as much as possible in the shoulders; make it as hard as possible as though you were raising and pushing down a heavy weight.

Repeat twenty times.

Action :—Muscles of the shoulders, whole chest and abdomen.

The Upper Back.

One part of the shoulders remains—the back of them. You can not put your hands behind you without using the muscles on the back of your shoulders, and if you do a great deal of work which makes you draw your hand or elbow quickly or strongly backward, you will soon make the backs of your shoulders strong, and well shaped also. A well built and well

developed back is both handsome and useful, while a narrow one will always seem weak, and is often felt to be so.

No. 1. Repeat Upper Inner Arm exercise, page 17.

No. 2. Repeat Front Shoulder exercises, page 18.

No. 3. Repeat Upper Arm exercise No. 3, page 15.

No. 4. Position same as in No. 3; only this time let go with left hand, and hang by right hand only, left hand easy down at side.

Hang this way till you count ten, drop on toes. Rest a minute, breathing slowly.

Repeat, hanging by left hand.

No. 5. Grasp the bar at the ends, palms turned down, elbows stiff, chest well out.

Raise the left hand and hold it high above head. Swing the right hand in a horizontal circle from front to rear, keeping the elbows stiff, and making the movement strong and steady.

Swing the bar twenty times in this way.

Repeat, with right hand held above head.

Action:—Upper back and front shoulder.

FREE EXERCISES.

No. 6. Hands out in front, arms horizontal, palms downward, chest well out.

Swing vigorously down past side of thighs to as far back as you can reach.

Repeat fifty times.

Action:—In back shoulders, upper back arms.

More Good Work for Upper Back:—Throwing a ball or stone. Rowing. Sawing wood. Throwing weight behind you, past your side. Climbing rope. Pulling in "tug-of-war".

The Neck.

A few exercises for this part will give the head a better poise and a more easy, graceful turn, and will improve the outline of the neck.

FREE EXERCISES.

No. 1. Clasp the hands at the upper part of the back of the the head, elbows close together.

At the same time you pull head forward by the muscles of the upper back arms, pull the head back by the muscles of the back of neck, making a double resistance.

Repeat ten times.

Action:—Back of neck and upper back arms.

No. 2. Place palms of hands under chin, elbows close together.

At the same time you push the head backward by the muscles of the front upper arms, pull the head forward by the muscles of front neck, making a double resistance.

Repeat ten times.

Action:—In front of neck, upper arms.

No. 3. Lean the head as far down on the right and left sides as possible. Make the movement in a straight line, keeping the nose in one position.

Repeat twenty times.

Action:—This exercises muscles of sides of neck.

No. 4. Neck all around. Stand about ten feet from some object about the height of face, turning the back square to the object.

Turn the head around on one side till you can see the object, and then turn around on the other side till you can see the object again, making the movement in the neck.

Small of the Back.

We come now to a part not very large—often not large enough, indeed—called the "small of the back," or back of the waist—but, at the same time, one of the most important parts of the whole body. However strong anywhere else we may be, if we have not a square, strong, well built waist, we are not thoroughly strong. A strong waisted man will be almost certain to out-walk, out-run over long distances, out-jump and beat at almost any sort of foot work calling for strength and staying power, and for the simple reason that the small waisted man is not as well-built as the other in a part called into very active use in these kinds of hard work.

No. 1. Bar out in front, horizontal, as high as the shoulders, hands about one foot apart, palms turned down, elbows stiff.

Raise the bar to straight above head; swing down through out in front, elbows stiff, reaching out as far as possible without raising the heels from the floor, aiming to touch the floor in front of the toes, without bending the knees; swing back to above head reaching out as far as possible as you go up.

Repeat fifteen times.

Action:—Small of the back, abdomen, front walls of chest, back thigh and knee joints.

No. 2. Bar horizontal against chin, palms turned forward, chest well out.

Push the bar down hard to the front of feet, or as near as possible, keeping the knees stiff.

Repeat twenty times.

FREE EXERCISES.

No. 3. Repeat Nos. 1 and 2, without bar, fingers touch toes or as near as possible.

MORE GOOD WORK FOR SMALL OF THE BACK:—Shoveling. Mowing. Pitching hay. Lifting heavy weight from the ground. Sawing wood. Rowing. Wrestling. Tug-of-war.

Sides of Waist.

The muscles of the sides are among those which help to keep us erect and from falling over. It will not take long to feel that the exercises given are stretching the sides, and making them stronger in a way unusual to most of us. This stretching, done carefully, and increased little by little, will not only bring strong and shapely muscles on the sides of the waist, just above the hip bones, but will also benefit the stomach, bowels, and other vital organs, by giving them more room and ease of action than they have when the body is at all bent forward or the waist drawn in, as it is far too often by most persons.

No. 1. Bar horizontal, down in front, hands at ends of bar, palms turned inward, chest well out.

Swing the bar vigorously in a horizontal circle from right to left around the body, making most of the action at the waist.

Repeat thirty times.

Action:—In waist, walls of chest and shoulders.

No. 2. Bar above head, hands at ends of bar, palms turned forward, feet about a foot apart, chest well out.

Sway the body slowly and steadily leaning first to the right side then to the left, making the action wholly at the waist. Push the hips well out at sides, and keep the bar and rear of body all in a vertical line.

Repeat ten times.

Action:—Strong in sides of waist and walls of chest, raises the shoulders.

FREE EXERCISES.

No. 3. Stand erect, chin up and head back, arms akimbo and the feet about one foot apart.

Movement same as in No. 2.

Repeat thirty times.

Action:—Muscles of waist, chest walls moderately.

More Good Work for Sides of Waist:—Pulling up on bar, rings, or branch overhead, feet together, knees straight; swing legs far up from side to side. Hanging by one hand, feet straight down. Climbing peg-pole or rope. Wrestling. Rowing. Pushing heavy weight over head. Fencing. Boxing. Walking erect, and rapidly, for a long distance. Running on the soles and toes. Jumping. Skating. Dancing. And as good as any; hopping on one foot.

The Chest.

The muscles across the upper part of the front of the chest, between the shoulders, are highly important in a variety of ways. Weak chested persons of either sex are likely to have these muscles weak. But these muscles are sure to be full if the chest is well set, the arms well made, shapely, and strong. The muscles of the arm and those of the upper half of the body so work together that you can scarcely use any one of them without setting most of the others into action. With these muscles full and strong it is far easier to hold the chest out than when they are thin and weak, for they seem to keep the chest out without much effort on their owner's part. This holding of the chest out is of great benefit—so great that, if done most of the time it sometimes even saves one's life.

Thousands of men and women, while at work, sit for many hours daily, and get but little exercise except for the hands or arms. When thus working they breathe small, partial breaths, so only partly filling the lungs. With only half work to do, both the chest and the lungs grow small and often weak.

Their owner also is likely to get weak and is more liable to take cold, and if the cold sets on the lungs, he has less chance for recovery than if the lungs were large, full, and well used. Making the muscles on the front of the chest large and strong helps to keep the chest full and well shaped, while the deep breathing, which most any vigorous exercise forces us to do, also aids greatly in the same way, and brings us in time the large and healthy lungs so desirable for all.

The value of a good chest is not appreciated as it should be. Farmers, mechanics and laborers, often have round backs, while the chest is narrow and not as broad as the shoulders. On the other hand, professional men, merchants, bankers. clerks, and about all who get their living by their heads rather than by their hands, do little or nothing to benefit their chests, or to keep them full and deep. Hence; if out-of-door boys and men will do some special work to enlarge their chests and make them stronger, they will be better for it, and be more fit for any thing they are called on to do; while to the in-door boys and men the advantage will be so great as to often not only keep them well, when they would otherwise break down with sickness, but even to insure to not a few a green old age, and a useful one as well. And in almost every particular is the same true of girls and women.

No. 1. Bar horizontal, down in front, palms turned inward, hands about two feet apart.

Carry the bar to a vertical at right side, right arm straight and immovable, left arm bent with forearm close to forehead. Push the bar back to starting position, pressing down firmly with left hand.

Repeat thirty times. Repeat, carrying bar to left side. Repeat, alternate to right and left.

Action: Muscles across the front of chest, arm and shoulder.

No. 2. Bar horizontal in front at height of chin, arms extended, palms downward.

Change to a vertical line with right hand above, doing it vigorously; return to horizontal.

Repeat twenty times. Repeat, carrying the left hand above. Repeat, alternate right and left.

Action: Same as in No. 1.

No. 3. Bar horizontal against the chin, palms to the front, hands about two feet apart.

Push the bar out in front vigorously; pull back strong to position.

Repeat twenty times.

Action: In muscles of chest and widens the shoulders.

No. 4. Bar horizontal down in front, hands at ends of bar, palms turned inward, elbows stiff.

Swing bar up through above head to down behind back, keeping the elbows stiff all the time. Raise again to above head, then lower to down in front.

Breathe in a full breath as you raise the bar each time, and look up as it swings to above head.

Repeat eight times.

Action: In muscles of shoulders and arms, widens and raises the chest.

No. 5. Chest expander, vertical. Lie flat on your back on the floor, bar on the floor above the head, arms straight, hands two feet apart, palms turned upward.

Carry the bar forward above face, arms fully extended, to down at front of thighs. Return along the same line to back of head.

Inhale a full breath as the arms swing from thighs to back of head, and exhale as they pass forward.

Action: One of the best chest expanding exercises.

FREE EXERCISES.

No. 6. Chest expander, lateral. Lie flat on your back on the floor, arms at sides of thighs, elbows stiff.

Carry the arms close along the floor toward head until the hands meet back of the head. Return in the same line to sides of thighs.

Inhale a full breath as the arms swing from thighs to back of head, and exhale as they pass down to thighs again.

Repeat twenty times.

Action: Expands chest to its utmost capacity.

No. 7. Repeat Front Shoulder exercises Nos. 4 and 5, page 19.

Repeat Upper Arm exercise No. 3, page 15.

Repeat Upper Back Arm exercises, Nos. 3, 4, 5 and 6, page 16.

The Abdominal Muscles,

The layers or bands of muscles which lie across the front of the waist are known as the abdominal muscles.

They are very important, not only helping us (with other muscles which lie on each side of them,) to move the body in many ways, but when made strong and kept so by daily exercise, greatly aiding the stomach, liver, kidneys, and bowels in doing their work, so helping to keep away dyspepsia, inflam-

mation of the bowels, and other disorders far too common in civilized lands. These muscles help to draw the body over forward, or to lift the legs upward. When lying on your back, you could not get up if these muscles did not help you to do so. Every time you lift your foot to walk you set them at work, and the higher you lift it, as in jumping or kicking, the more you give them to do.

Whoever has these muscles small and weak will generally have a feeble gait, and will often lean forward a little when walking, as if too weak to stand up straight. But if you walk with a strong, high step, lifting the heel well, and pushing with the front of the foot just as it leaves the ground, you will find you are giving these muscles good work to do.

FREE EXERCISES.

No. 1. Horse Walk. Step high and well out in front like a spirited horse, keeping the upper part of the body well back.

Step this way one hundred times or more.

Action: Muscles of abdomen and front of thigh.

No. 2. Double Hop. Raise the right knee until the right foot is one foot above the floor, then giving a light spring with the left foot, raise it one foot off the floor, landing at the same time on the right foot, but only on its toe and sole, not on the heel.

Repeat thirty times.

Action: In abdomen, thighs and calves.

No. 3. Backward Stretch. Fold your arms behind you. Raise the right foot and hold it far out in front of you; holding the chin up high, let the head and shoulders drop far backward and point the foot as far outward and downward as possible.

Repeat ten times. Repeat, raising the left foot.
Action: In abdomen, muscles of the under thigh.

No. 4. Long Stretch. Stand about eighteen inches from a wall, feet about one foot apart, hands against wall high above head.
Lean the body forward until the chest touches the wall, bending the elbows, knees stiff and heels on floor.
Repeat ten times.
Action: In abdomen, small of the back and chest.

No. 5. Stand erect; gradually draw the head and shoulders back until as far past the vertical as possible. Return slowly to position.
Repeat five times.
Action: Hard in muscles of abdomen as you draw back to position.

No. 6. Abdominal Test. Lie flat on your back on the floor, arms folded across the chest.
Raise the trunk of the body off the floor and bring it to a sitting position, lifting it entirely by the muscles of the abdomen; keep the arms folded, knees stiff, and heels on the floor.
Repeat five times.
Action: Hard in muscles of abdomen.

No. 7. Position same as in No. 6. Raise your feet till the legs are at a vertical, keeping the trunk of the body on the floor.
Repeat ten times.

MORE GOOD ABDOMINAL WORK.—Jumping. Kicking foot ball. Horse-back riding. Chopping wood. Trying how high you can reach, or can jump and reach. Swimming. Pulling up on a rope or bar.

Leg Work.

While the muscles chiefly used in walking, running, jumping, lifting or stooping, are those from their frequent use, that would seem to need the least attention, yet it is quite necessary to know something about these muscles, and how best to develop and strengthen them. If you should stand on a street corner to observe, you could scarcely, by actual count, find one person in ten to be an easy, graceful and erect walker. And why do so many persons shuffle along with a languid, unsteady or jerky movement? It is because these muscles, which they use every day, are never exercised or stregthened, except by the unavoidable use made of them.

Horsemen give a great deal of their time and thought, and spend thousands of dollars every year in breeding and improving trotting stock; but on the other hand, how little do men care for the bettering of the quality and strength of their own blood.

The muscles now chiefly called into use are those of the abdomen, thigh, calf, and front of leg below the knee. At all times, save when you are sitting still, they are busy; but when you walk slowly or languidly, however, you do not work them hard enough to do them much good, or to give them nearly the size and power which brisk walking would bring to them.

Front of the Thigh.

FREE EXERCISES.

No. 1. Front of the Thigh. Fold your arms behind you, place one foot about twelve inches in front of the other. Slowly bend the knees until they nearly touch the floor, keeping the upper part of the body in a vertical line. The slower this is done the more strength will be required and derived. Raise to position, slowly as before.

Repeat six times.

Action:—In thighs and joints of legs.

No. 2. Hands at each side against the lower part of chest, shoulders back and down, the left foot about eighteen inches in front of the right.

Bending your knees slowly, and stooping only a little, now spring smartly upward, and at the same time bring your left foot backward and your right foot forward, landing on toes and soles only. Spring back again, left foot forward, right foot backward, as at the start.

Repeat thirty times.

Action:—Front of thigh and calves.

No. 3. Left foot to front, a few inches above the floor.

Gradually bend the right knee and lower your body backwards till you are half way to the floor.

Raise slowly to straight position.

Repeat six times. Repeat, right foot to front.

Action:—Strong in thighs.

No. 4. With bar. Bar down in front in both hands, left foot to the front a few inches above the floor.

Gradually bend the right knee and lower the body till you are all the way down. The body is supported by the right leg. The left leg is straight out in front and parallel with the floor.

Raise slowly and steadily to straight position.

Repeat three times. Repeat, right foot to the front.

Action:—Strong in thighs and knee joints.

No. 5. Bend the knees till you are half way to the floor.

Spring straight upward, till your feet are off the floor six inches or more, springing from the toes and landing on the toes.

Repeat ten times.

Action: — In thighs, calves, front of leg below the knee.

More Good Word for the Thighs: — Strong, vigorous walking. Slow, easy running for a long distance. Walking or running up stairs or up hill. Running down stairs on your toes. Skating. Vaulting. Jumping, upward or downward. Leaping. Dancing. Riding on a bicycle. Hopping. Riding horseback. Rowing. Lifting weights from floor. Pulling in the tug-of-war. Any kind of wrestling.

The Under Side of Thigh.

No. 1. Bar horizontal down in front, hands about two feet apart, palms turned inward.

Bending the knees, lower the body to a sitting position, going down slowly and coming up as though raising a heavy weight on the head. The arms are kept straight and when the body is lowered the bar is to the front of knees.

FREE EXERCISES.

No. 2. Stand with your back close to a wall, the feet about six inches away from it.

Place the right heel against the wall, about three inches above floor.

Push vigorously and hard against the wall, until you slowly count ten.

Repeat ten times, alternately with left heel against wall.

No. 3. Repeat all of the Small of the Back exercises, page 23.

No. 4. Stand on your left foot and place one end of your weighted exercising bar on the heel of the right foot. A dumb-bell or other weight strapped on may be better.

Raise the right heel behind you till it is as high as the left knee; slowly lower to floor.

Repeat twenty times. Repeat, raising the left foot.

MORE GOOD WORK FOR THE UNDER SIDE OF THIGH:— Walking up hill. Running slowly up hill. Running on level ground, but throwing the heel high up behind at each step. Running backward. Hopping on one foot, and carrying a dumb-bell or other weight held up behind on the other. Hanging by the heels. Jumping over some object as high as you can clear. Trying how high you can jump to touch some object.

Calves.

FREE EXERCISES.

No. 1. Stand with chin up high, heels together, toes turned out, and arms folded.

Raise slowly on the toes, till the heels are as high off the floor as you can get them; lower slowly till the heels are on the floor again.

Repeat thirty times.

No. 2. Raise the right foot off the floor, and raise the heel of the left foot off the floor.

Hop *straight upward* with the left foot, never touching the left heel to the floor, either when you spring or when you land.

Repeat fifteen times. Repeat, hopping with right foot.

No. 3. Raise the right foot off the floor about ten inches, then raise the heel of the left foot off the floor.

Remain in this position while you slowly count five, then lower the left heel to floor again.

Repeat ten times. Repeat with left foot off the floor.

No. 4. Raise the right foot off the floor till it is as high as the left knee.

Hop with the left foot as far as you can with comfort, then change to the right foot.

This is one of the very best exercises for the calf of the leg.

No. 5. Stand perfectly erect with the arms akimbo at sides.

Raise the heels of both feet off the floor, keeping the knees stiff, then spring straight upward one inch or more off the floor, landing on the toes and soles.

Repeat eight times.

More Good Work for the Calves:—Walking on level ground, with a weight in each hand, pushing hard with the soles and toes as the foot leaves the ground, and swinging the weight well up in front with each step. Running on the soles and toes. Hopping on one foot for a long distance. Jumping. Horseback riding. Spring-board work. Vaulting. Riding on bicycle. Walking on soles and toes.

The Shin Muscle.

FREE EXERCISES.

No. 1. Fold your arms behind you. Standing on the left foot, raise the right foot, lifting it about one foot or more off the floor, and holding the right knee stiff.

Draw the toes of the right foot in over the instep, the toes pointing toward the knee as much as possible. Hold it so drawn up a moment.

Repeat five times. Repeat, standing on the right foot.

No. 2. Position same as in No. 1.

Draw the toes well up toward the knee, then sway the foot first far to the right and then as far to the left, being careful to hold the knee stiff and the toes well drawn up.

Repeat, swaying ten times with each foot.

No. 3. Raise sharp on heels, keeping the body as still as possible; keep the chest, stomach and thighs well forward.

Repeat thirty times.

No. 4. Fold your arms behind you.

Standing on the left foot, swing the right foot from front to rear, as far up each way as possible, being careful to keep the toes of the right foot pointing toward the right knee.

Repeat, swinging each way thirty times. Repeat, standing on the right foot.

Action:—In shin muscle, and the whole leg on which the body rests while swaying.

MORE GOOD WORK FOR THE SHIN MUSCLES:—Swimming. Rowing. Jumping of any sort, especially upward. Kicking foot-ball. Leaping. Hanging by the toes on the horizontal bar or trapeze. Swinging by the toes on the rings. Standing on one foot and reaching the other as high up as possible on a side wall. Dancing. Fast walking. Stooping down as low as you can, if you do not take the heels off the floor.

Running.

No. 1. Hold the chin above the level.

No. 2. Never touch either heel to the ground.

No. 3. Keep your hands shut and your elbows bent, hands level with waist; swing the arms easily.

No. 4. As much as you can, breathe through the nose only, and make each breath as slow, deep, and full as possible.

No. 5. Step far outward, but do not throw the foot up high behind.

No. 6. In running for exercise, and to develop the legs and lungs, do not run as fast as you can; you will not tire so quickly yet will get the good of running.

No. 7. At first run slowly and only as far as you can with comfort, even though it is not over a hundred yards.

No. 8. Each day the first week run as far as you did the first day. The next week try to run twice as far each day, and after that run daily as far as you can with comfort.

Stationary Running Exercises.

No. 1. Hands down at sides, arms stiff.
Imitate running with an easy gait, remaining at one position and stepping on toes and soles only, not on the heels. Take eight steps with each foot.
Action:—Muscles of the back and calves.

No. 2. Arms horizontal out at sides.
Action:—Top of shoulders.

No. 3. Arms horizontal out in front, thumbs interlaced.
Action:—Top of shoulders and small of the back.

No. 4. Hands above head, arms straight, fingers interlaced, palms up.
Action:—Upper back; raises side and front walls of chest.

No. 5. Hands clasped back of head.
Action: Back of neck and back upper arms.

No. 6. Fold arms behind back.

No. 7. Hands on hips, fingers out, elbows well back.

No. 8. Fold arms in front, lean well forward; "funny run".
Action:—Posterior; small of back strong.

No. 9. "Get there". Quick motion; stepping as fast as possible, hands swinging easy at sides.
Action:—General muscular action in the lower part of the body, and most of the important respiratory muscles.

Jumping Movements.

No. 1. Bar horizontal down in front. 1. Jump the feet apart, sideways, jumping on the toes. 2. Carry the bar up to arms horizontal out in front. 3. Bring the feet close together. 4. Bar down to first position.

No. 2. Bar horizontal down in front. 1. Jump the feet lively apart, alighting on the toes and at the same time carry the bar up to arms horizontal out in front. 2. Jump the feet together, bringing the bar back to first position.

No. 3. Bar horizontal down in front. 1. Spread the feet apart, carrying bar up to front. 2. Feet brought together, bar carried up to above head. 3. Lower the bar to arms horizontal out in front, jumping the feet apart at the same time. 4. Bar brought down close to front of body, jumping the feet together.

No. 4. Bar horizontal down in front. 1. Feet apart, bar up to front. 2. Feet together, bar to over head. 3. Feet apart, bar lower down behind back, straight arm. 4. Feet together, bar carried up to over head. 5. Feet apart, bar lower to front. 6. Feet together, bar back to starting position.

In performing the jumping movement grasp the bar very firmly, keep the shoulders pressed back, relax the legs slightly in the jump, alighting upon and springing from the toes.

NOTE.—Many of the exercises given in this book may be done in connection with the leg jumping movements, thus affording more variation, and making the exercises more beneficial to those desiring vigorous work.

Hints About Bathing.

Don't bathe when you feel very tired, or just before or after a full meal, or where a draught of air can blow on you.

Bathe with sponge bath *after* exercise, for exercise increases circulation, and circulation, while it feeds the body with new atoms, at the same time drives the impurities to the skin, that warm water removes; then, after a few minutes sponging with tepid water, quickly wash with cooler water, then dry the body with a soft, absorbent towel, and polish off with one a little coarser. Such a bath will not take over ten minutes. Use the tub when you take your weekly bath, using the *best* soap; better not use any when you take your "*graded*" sponge bath.

Never stay in tub over ten minutes; better five.

The best evidence that your exercise and bath have done you good, is in the pleasurable sensation of warmth and a general elevation of spirits, thus proving that the combination of exercise and bathing is a natural tonic and stimulant.

Bathing will increase the activity of the pores of the skin, so that they will act as self regulating radiators against heat or cold.

The Greeks thought that exercise and bathing were inseperable.

A TABLE

Showing the Proper Weight, Height and Measurement of a fully developed Adult.

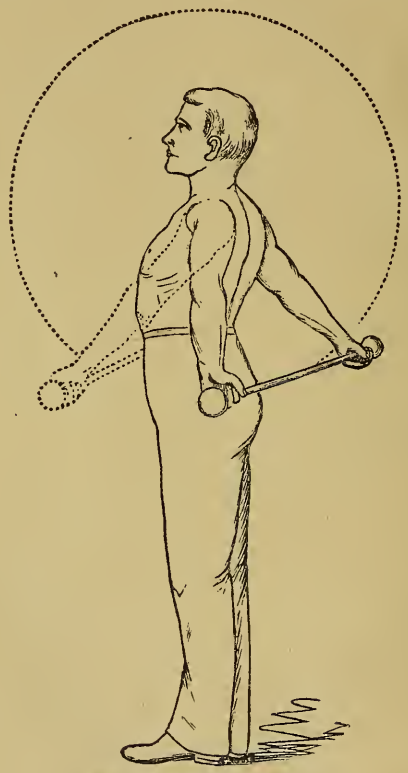
Height.	Weight.	Neck.	Chest.	Waist.	Biceps.	Forearm	Thighs.	Calves.
5 ft.	103–107	11⅛	32–33	26	Same Measurement as for Neck.	8⅞	15	Same measurement as for Neck.
5 ft. 1 in.	107–111	11½	33–34	29½		9¼	16	
5 ft. 2 in.	111–116	12	34–35	30		9⅝	17	
5 ft. 3 in.	116–121	12½	35–36	30½		10	18	
5 ft. 4 in.	121–127	13	36–37	31		10⅜	19	
5 ft. 5 in.	127–133	13½	37–38	31½		10¾	20	
5 ft. 6 in.	133–140	14	38–39	32		11⅛	21	
5 ft. 7 in.	140–147	14½	39–40	32½		11½	22	
5 ft. 8 in.	147–155	15	40–41	33		11⅞	23	
5 ft. 9 in.	155–164	15½	41–42	33½		12¼	24	
5 ft. 10 in.	164–174	16	42–43	34		12⅝	25	
5 ft. 11 in.	174–185	16½	43–44	34½		13	26	
6 ft.	185–196	17	44–45	35		13⅜	27	

Table for Measurments.	Increase.	Increase.
Date		
Name		
Age		
Weight		
Height		
Neck		
Right shoulder		
Left shoulder		
Cir. shoulder		
Chest inflated		
Chest uninflated		
Chest diameter		
Lung capacity		
Waist		
Hips		
Right thigh		
Left thigh		
Right calf		
Left calf		
Right arm up		
Left arm up		
Right arm down		
Left arm down		
Right forearm		
Left forearm		

"It is exercise alone that supports the spirits and keeps the mind in vigor."—Cicero.

"Such is the constitution of man that labor may be said to be its own reward."—Johnson.

"Anything is better than the white-blooded deterioration to which we all tend."—O. W. Holmes.



See Page 27. Fig. 4.

"The only way for a rich man to be healthy is by exercise and abstinence; to live as if he were poor."
Sir W. Temple.

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